

Solving Single-Step Equations

(Use the opposite operation)

Solve each equation. Then check your solution.

$$d - 8 = 17$$

$$v + 12 = -5$$

$$8j = 96$$

$$\frac{y}{9} = -8$$

Examples:

$$-84 = \frac{d}{3}$$

$$8 - (-c) = 1$$

$$\frac{5}{9} + q = \frac{2}{3}$$

$$\frac{1}{5}p = \frac{3}{5}$$

$$-3x = \frac{3}{2}$$

$$\frac{2}{3}a = 6$$

You try...

❶ $-13z = -39$

❷ $29 = a - 76$

❸ $\frac{7}{10}m = 14$

❹ $78 + r = -15$

WARMUP:

Solve each equation.

$$y - (-1.5) = 0.5$$

$$p - 4 = 6$$

$$-\frac{d}{7} = -13$$

$$-6d = -42$$

$$11 = -16 + y$$

$$s + (-28) = 0$$

You Try Answers: 1) $z = 3$

2) $a = 105$ 3) $m = 20$ 4) $r = -93$

PUNCHLINE • Bridge to Algebra



Equations, Problems, and Functions

Solve, then cross out the letter above the solution. When you are finished, the answer to the title question will remain.

24. $-n = 40$



F I U N E W R A T I S T L O P E O R H E A K I T O S N U E X T P

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|-----|----|-----|---|-----|-----|---|-----|----|---|-----|----|-----|----|-----|---------------|----|------|----|----|------|----|------|-----|-----|-----|-----|-----|-----|------|----|
| 2.5 | -15 | 20 | -72 | 8 | -66 | -68 | 5 | -75 | 64 | 7 | -13 | 60 | -84 | 32 | -33 | 82 | 28 | -500 | 17 | 24 | -120 | 16 | -625 | -36 | 7.2 | -32 | 108 | -40 | 144 | -0.5 | -4 |
| Answers 1-12 | | | | | | | | | | | | | | | | Answers 13-24 | | | | | | | | | | | | | | | |

IN-Class Practice:



What Can You Say About a Really Terrible Mummy Joke?

Solve, then cross out the letter above the solution. When you are finished, the answer to the title question will remain.

PUNCHLINE • Bridge to Algebra

Equations, Problems, and Functions:

1. $y - 13 = -5$

$y = 8$

5. $\frac{1}{6}k = -11$

$k = -66$

9. $30 = 12d$

$d = \frac{5}{2}$

13. $64 = x + 100$

$x = -36$

17. $-6 = \frac{1}{20}h$

$h = -120$

21. $-8e = 4$

$e = -\frac{1}{2}$

2. $\frac{m}{-15} = -4$

$m = 60$

6. $-14 + u = 50$

$u = 64$

10. $4\frac{1}{2} + q = 9\frac{1}{2}$

$q = 5$

14. $-\frac{1}{9}b = -12$

$b = 108$

18. $m - (-4) = 32$

$m = 28$

22. $\frac{x}{25} = -25$

$x = -625$

3. $a + 70 = 2$

$a = -68$

7. $-18x = -360$

$x = 20$

11. $24 = -\frac{v}{3}$

$v = -72$

15. $q + (-1) = 16$

$q = 17$

19. $-10a = -72$

$a = \frac{36}{5} = 7.2$

23. $-92 + w = -10$

$w = 82$

4. $-3t = 99$

$t = -33$

8. $-75 = n + 9$

$n = -84$

12. $-20 = -7 + w$

$w = -13$

16. $45p = -180$

$p = -4$

20. $-12 = y - 36$

$y = 24$

24. $-n = 40$

$n = -40$



F I U N E W R A T I S T L O P E O R H E A K I T O S N U E X T P

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|-----|----|-----|---|-----|-----|---|-----|----|---|-----|----|-----|----|-----|---------------|----|------|----|----|------|----|------|-----|-----|-----|-----|-----|-----|------|----|
| 2.5 | -15 | 20 | -72 | 8 | -66 | -68 | 5 | -75 | 64 | 7 | -13 | 60 | -84 | 32 | -33 | 82 | 28 | -500 | 17 | 24 | -120 | 16 | -625 | -36 | 7.2 | -32 | 108 | -40 | 144 | -0.5 | -4 |
| Answers 1-12 | | | | | | | | | | | | | | | | Answers 13-24 | | | | | | | | | | | | | | | |

IT SPHINX ☺ (LOL)

1-Step Equations

Name _____

Topic 2-Exit Quiz

Date _____ Period _____

Solve each equation.

1) $3 = x - 25$

2) $17 + x = 26$

3) $\frac{x}{4} = 11$

4) $25n = 100$

5) $0 = -14m$

1-Step Equations

Name _____

Topic 2-Exit Quiz

Date _____ Period _____

Solve each equation.

1) $6 = n - 3$

2) $32 = 8 + a$

3) $\frac{r}{3} = 7$

4) $3b = 60$

5) $26p = 0$

Solving Multi-Step Equations.

- isolate variable term first (you may need to...
 distribute or **combine like terms** first)
- use *opposite operation* to get variable by itself
- "work backwards"

Examples

$$5x + 3 = 23$$

$$5 + \frac{x}{4} = 1$$

$$18 - 4v = 42$$

$$\frac{3}{4}q - 7 = 8$$

$$-\frac{h}{3} - 4 = 13$$

$$\frac{3k - 7}{5} = 16$$

$$2n + 3n + 7 = -41$$

$$-6 - 3(2k + 4) = 18$$

Word Problems

Find two consecutive integers whose sum is 19.

Find three consecutive even integers whose sum is 132.

COIN COLLECTING Jung has a total of 92 coins in his coin collection. This is 8 more than three times the number of quarters in the collection. How many quarters does Jung have in his collection?

Solving Multi-Step Equations

- isolate variable term first (you may need to...
distribute or combine like terms first)
- use **opposite operation** to get variable by itself
- "work backwards"

Examples

$$5x + 3 = 23$$

$$\underline{-3 \quad -3}$$

$$5x = 20$$

$$\underline{\div 5 \quad \div 5}$$

$$x = 4$$

$$18 - 4v = 42$$

$$\underline{-18 \quad -18}$$

$$-4v = 24$$

$$\underline{\div -4 \quad \div -4}$$

$$v = -6$$

$$5 + \frac{x}{4} = 1$$

$$\underline{-5 \quad -5}$$

$$4 \cdot \frac{x}{4} = -4 \cdot 4$$

$$x = -16$$

$$\frac{3}{4}q - 7 = 8$$

$$\underline{+7 \quad +7}$$

$$\frac{4}{3} \cdot \frac{3}{4}q = 15 \cdot \frac{4}{3}$$

$$q = \frac{60}{3} = 20$$

$$q = 20$$

PEMDAS

$$-\frac{h}{3} - 4 = 13$$

+4 +4 →

$$-2\left(-\frac{h}{3}\right) = 17(-3)$$

$$h = -51$$

$$2n + 3n + 7 = -41$$

$$5n + 7 = -41$$

-7 -7

$$5n = -48$$

5 5

$$n = -\frac{48}{5} = -9.6$$

$$\cancel{5} \cdot \frac{(3k - 7)}{\cancel{5}} = 16 \cdot 5$$

$$3k - 7 = 80$$

+7 +7

$$3k = 87$$

3 3

$$k = 29$$

$$-6 - 3(2k + 4) = 18$$

$$-6 - 6k - 12 = 18$$

$$-18 - 6k = 18$$

+18 +18

$$-6k = 36$$

-6 -6

$$k = -6$$

P
E
MD
AS

Word Problems $\pm \#$

Find two consecutive integers whose sum is 19.

$$\begin{aligned} x + x + 1 &= 19 \\ 2x + 1 &= 19 \\ -1 & \quad -1 \\ \hline 2x &= 18 \\ \frac{2x}{2} &= \frac{18}{2} \\ x &= 9 \end{aligned}$$

9, 10

Find three consecutive even integers whose sum is 132.

$$\begin{aligned} x + x + 2 + x + 4 &= 132 \\ 3x + 6 &= 132 \\ 3x + 6 &= 132 \\ -6 & \quad -6 \\ \hline 3x &= 126 \\ \frac{3x}{3} &= \frac{126}{3} \\ x &= 42 \end{aligned}$$

COIN COLLECTING Jung has a total of 92 coins in his coin collection. This is 8 more than three times the number of quarters in the collection. How many quarters does Jung have in his collection?

$$\begin{aligned} 3q + 8 &= 92 \\ -8 & \quad -8 \\ \hline 3q &= 84 \\ \frac{3q}{3} &= \frac{84}{3} \\ q &= 28 \end{aligned}$$

28 quarters

You try...

❶ $8 - 5w = -37$

❷ $2(3h + 2) - 4h = -16$

❸ $-\frac{d}{6} + 12 = -7$

❹ $\frac{b + 1}{3} = 2$

Warmup: Solve each equation.

$$\frac{x}{7} - 0.5 = 2.5$$

$$17 + 3f = 14$$

$$\frac{c - 5}{4} = 3$$

$$5(h + 4) - 6h = -24$$

If the sum of three consecutive even integers is 102, find the three integers.

You try answers:

① $w = 9$ ② $h = -10$ ③ $d = 114$ ④ $b = 5$

Warm Up #2 - topic 3

$$1) \frac{m-6}{2} = -3$$

$$2) \frac{x}{3} - 8 = -11$$

$$3) \frac{2}{3}x + 4 = 8$$

$$4) \frac{2}{5}(x+1) = 1$$

What if the question is...

If $-5c + 6 = -69$, what is the value of $6c - 15$?

If $7x - 3 = 53$, what is the value of $11x + 2$?

**Practice: White board
work... BE READY to go to
the board!**

Solving Multi-Step Equations

Name _____

Topic 3 - Exit Quiz

Date _____ Period _____

Solve each equation.

1) $10 + \frac{n}{4} = 11$

2) $\frac{p-5}{21} = -1$

3) $a + 4 - 7a = -2$

4) $-5 = -x + 2x$

5) $-5x - 4(6 + x) = -69$

Topic 3 - Exit Quiz -Retake 1

Date _____

Solve each equation.

1) $\frac{-8 + r}{8} = -3$

2) $\frac{n}{2} - 10 = -5$

3) $18 = -m - 5m$

4) $1 = -5x + 1 - 7x$

5) $-72 = 4n + 4(5n - 6)$